METHOLOGICAL ADVANCES TO ENHANCE QUALITY IN INTERVENTION PROGRAMS FOR ELDERLY PEOPLE

The Sixth International Campbell Collaboration Colloquium
California, February 22-24, 2005

Susana Sanduvete Chaves
Salvador Chacón Moscoso
David Alarcón Rubio
Julio Sánchez Meca

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1. INTRODUCTION

- Nowadays, there is an increasing need to design and implement intervention programs to attend elderly people.
- The number of elderly people with different degrees of need (physical, medical, psychological cares, etc.) is constantly increasing. At the same time, there are not enough well-trained caregivers to attend to them (Corrales, Tardón & Cueto, 2000; Fernández, Fernández & Fernández, 1990).
- Although this is a real need, we have to increase not only the number of intervention programs but also their quality (Calvo & Díaz, 2004).

2. OBJECTIVES

- Describe main characteristics of intervention programs in elderly people.
- Propose methodological advances to enhance quality of intervention programs for the elderly (Chacón, García, Alarcón & Sanduvete, 2003; Chacón, Sánchez, Alarcón, Marín, Sanduvete & Huedo, 2004; Sanduvete, 2004; Sanduvete, Chacón & Alarcón, 2004; Sanduvete, Chacón, Holgado y Barbero, 2005; Sanduvete & Chacón, 2005).

3. METHODOLOGY

3.1. PROCEDURE:

- We analyzed abstracts referring to interventions in elderly people obtained from the following data-bases: Psycinfo, ERIC, Current Contents, EBSCO Online and Medline.
- Data were obtained till September 2005.
- We used the following keywords separately and in combination: older adult, elderly, old age, aging, geriatrist and geriatric.
- Three different coders coded the available studies. An adequate intra-class correlation coefficient of reliability was obtained (0.85).

3. METHODOLOGY (II)

3.2. SAMPLE:

- We found 1384 abstracts. We studied 1125.
- Exclusion criteria:
  - Papers without enough data.
  - Non-human subjects.
  - Replication of previous included papers.

3. METHODOLOGY (III)

3.3. INSTRUMENTS:

- Available database in the University of Seville.
- Procite (V.5) to manage information from records.
- SPSS 12.0 to codify and analyze data.
- System of categories (Sanduvete, Chacón y Alarcón, 2004).

4. RESULTS

- Almost every abstract was obtained from **papers**.
- The **number of publications** is increasing along the time.
- **Theoretical model** is not specified (70%).
- In 45% of the studies, the **context** of intervention is clinic; in 30%, hospital.
- **Age range** is not described (60%).

4. RESULTS (II)

- In 45% of cases in which the **age** is known, the range is between 61 and 75.
- In 75% of cases, the intervention is made in rural and urban **contexts**.
- **Assignment of units** was usually not randomized (65%).

4. RESULTS (III)

- Program design is usually **pre-experimental** (mainly only post-test, 40%); and **quasi-experimental** (pre and post test with a comparison group, 25%).
- In 70% of cases, more than 10 elderly people participated in the intervention.
- In 70% of cases, **attrition** was lower than 30%.
- **Follow up** period of time is typically less than 6 months (60%).
- There are **measurements** before and after the intervention only in 25% of cases.

4. RESULTS (IV)

- In 65% of cases, some pretest variables were not measured at postest.
- 55% of **instruments** are semi-standardized; 20% are objective.
- 75% of interventions are **homogeneous** for every participant.

4. RESULTS (V)

- **Design** was usually not double blind (75%).
- Effect size is rarely reported (90%).
- In 40% of cases, the intervention was implemented in **USA**; in 20%, in **EU**.

5. DISCUSSION

Improvements:

-Basic structure of intervention: Anguera & Chacón, in preparation; Chacón, Anguera, Pérez & Holgado, 2002; Shadish, Cook & Campbel, 2002.

- Theoretical model: Bronfenbrenner, 1987.

5.1. Needs assessment.

- Theoretical and social justification.
- Facilitate participation from principal stakeholders:
  - Elderly people.
  - Family, friends and/or relations.
  - ‘professionals in the area’.
  - Potential participants.
- Detect hobbies in order to have motivation and reach a natural intervention.
- Different types of instruments (standardized, semi-standardized and non-standardized):
  - Variability (quantitative and qualitative).
  - Comparison within data.

5.2. Objectives.

- Based on theoretical model.
- They have to cover the most urgent needs.
- Every stakeholder should to be able and encouraged to participate in the process (also to decide important themes).
- Feasible and defined in temporal terms.

5.2. Objectives (II).

- Intervention in all levels/ contexts. Some examples:
  - The person:
    - Physical exercise vs. dependence.
    - Mental exercise in a common and diary way vs. mental illnesses.
    - Style of life healthy/ active.
    - Medical regular controls.

5.2. Objectives (III).

- The family (microsystem):
  - Autonomy.
    - Elderly people have to be able to do some kind of work if they want.
  - Social relationships.
  - Collaborate in planning the activities in elderly person's common day.
- The place were they live (microsystem):
  - Adapt architecture to needs.
  - Keep same things in the same places.

5.2. Objectives (IV).

- The neighborhood (exosystem).
  - Integration of elderly people.
- The State/ Government/ Society (macrosystem):
  - Economic grants.
  - Help to caregivers.
  - Change of popular thinking through specific actions.

5.3. Design.

- Coherence.
- Detailed description in every aspect:
  - Human and material resources.
  - Activities to reach each objective.
  - Participants in the program.
  - Assignment of participants to different groups:
    - Known.
    - Create similar groups.
  - Temporally.
  - Time of measurement:
    - Before, during and after the implementation.
    - Different measurements each time.

5.4. Implementation

- Accord to the design.
- Follow-up across the intervention (improvements at the time).
- Make control techniques before and during the implementation and statistics techniques after the intervention.

5.5. Results

- Qualitative and quantitative, more than only descriptive analysis.
- Follow-up period after finishing the intervention and comparison with other groups and moments.
- Efficacy, effectiveness and efficiency.
- Instruments to measure the construct.

6. CONCLUSIONS
How to improve the quality of the design of intervention

- Articulate **theoretical models** and **previous studies** that justify the intervention program designs (how to describe an "intervention" successfully).
- Increase the intervention **contexts**.
- **Assignment procedure of units (subjects) to conditions (causal effects):**
  - Should be clearly specified (randomly if possible –unbiased estimation of the effect size-).
  - Alternative: use similar comparison groups (using matching of units before assignment or cohort groups).
- **Pretest observations** (observations previous to program implementation):
  - Enhance using multiple pretest observations (as many as possible, always within boundaries of obtaining valid data) & trying to use high quality measures (for example physiological and standardized ones).
  - We must use at least one pretest observation (to test effects of interventions).
  - Alternative to pretest observations: pretest of independent samples, retrospective measures or proxy pretest of outcomes.

6. CONCLUSIONS (II)

- **Post-test observations**:
  - We will always have a posttest observation, but we should add multiple posttest observations, equal or similar to pretest ones, whenever possible (always within boundaries of obtaining valid data).
  - Enhance normalized post-test observations.
  - Alternative: we can combine post-test observations with non-equivalent dependent variables.
- **Comparison groups**:
  - More extensive information about sampling features (selection, error, bias, attrition, etc.) should be detailed.
  - Randomly conformed groups should be enhanced; nevertheless, it is better to use cohort groups or matching than other non-equivalent comparison groups (Shadish, Cook & Campbell, 2002).
  - Multiple comparison groups should be used.
  - In extreme cases we can obtain comparison groups from regression extrapolation, or by using secondary data to make comparisons.

6. CONCLUSIONS (III)

- Implementation of the program:
  - Efficient follow-up procedures.
  - Alternatives (in some contexts): switching replications design; reversal design).
- Control techniques.
- Data analysis not only descriptive.

7. FUTURE DEVELOPMENTS

- Meta-analytic study to detect effective interventions and modulated variables. Principal problems: heterogeneity of the measurements; Small N (Shadish, Chacón-Moscoso & Sánchez-Meca, 2005).
- Empirical exploratory study based on Structural Equation Models to detect the most influenced variables to increase quality of life in elderly people (Steyer, Gabler, von Davier, Nachigall & Buhl, 2000).

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